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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,113

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Osamu Mizuno

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WENDEROTH, LIND & PONACK L.L.P.
2033 K. STREET, NW
SUITE 800
WASHINGTON, DC 20006

EXAMINER

AGUSTIN, PETER VINCENT

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

09/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,113	Applicant(s) MIZUNO ET AL.	
	Examiner Peter Agustin	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-36 is/are pending in the application.
- 4a) Of the above claim(s) 23-26, 28, 30 and 32-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-22, 27, 29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application is a national stage entry (371) of PCT/JP05/12091, filed on June 30, 2005.
2. Claims 19-36 are currently pending.

Unity of Invention

3. Applicant's election without traverse of species readable on claims 19-22, 27, 29 & 31 in the reply filed on July 29, 2008 is acknowledged.
4. Claims 23-26, 28, 30 & 32-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 29, 2008.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

6. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

7. Figure 20 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The

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replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

8. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 19-22, 27 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. (JP 2004-039068) (please refer to machine translation) in view of Nagai (US 6,968,563 which is equivalent to Japanese Patent No. 3505525 mentioned in the applicant's admitted prior art).

In regard to claim 19, Mizuno et al. disclose an optical head (Drawing 1) comprising: a laser light source (3) emitting a flux of light (3a); an objective lens (5), the flux of light from the laser light source to an optical disk (1) passing through the objective lens (5); a lens holder (10) holding an aberration correction lens (4) in a space between the laser light source (3) and the objective lens (5); a drive shaft (7) disposed to extend in a direction (AB) parallel to an optical axis of the flux of light (as shown), the drive shaft (7) guiding the lens holder (10) in the

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extended direction (AB); a piezoelectric element (6) provided at an end portion of the drive shaft (7), the piezoelectric element (6) being capable to extend and contract in a drive shaft direction in response to an applied voltage (paragraphs 0023 & 0024); wherein the lens holder (10) is movable relatively with respect to the drive shaft (7) in the drive shaft direction (AB) by varying a change rate when the applied voltage to the piezoelectric element is increased and decreased (paragraphs 0023 & 0024).

In regard to claim 20, Mizuno et al. disclose that a voltage that gives a rise to a change causing the drive shaft to slide with respect to the lens holder and a voltage that gives a rise to a change causing the drive shaft to move integrally with the lens holder are repetitively applied to the piezoelectric element (see paragraphs 0024-0027).

In regard to claim 22, Mizuno et al. disclose that the drive shaft (7) is supported on a base having a bottom portion (e.g., bottom of lens holder 10).

In regard to claim 27, Mizuno et al. disclose that the lens holder (10) comes in contact with the drive shaft (7) via a frictional holding body (8).

In regard to claim 31, Mizuno et al. disclose that the aberration correction lens (4) corrects spherical aberration (see paragraph 0001).

However, Mizuno et al. do not disclose: in regard to claim 19, a position detection portion detecting a position of the aberration correction lens in the drive shaft direction; in regard to claim 21, that the position detection portion includes a magnetic field generation portion and a magnetic field detection portion disposed to be allowed to undergo displacement with respect to the magnetic field generation portion in the optical axis direction; and in regard to claim 22, that

the magnetic field detection portion is disposed so as to protrude from the bottom portion of the base.

Nagai discloses: in regard to claim 19, a position detection portion (Figure 6, element 22a) detecting a position of an aberration correction lens (Figure 7, element 33) in the optical axis direction; in regard to claim 21, that the position detection portion (22a) includes a magnetic field generation portion and a magnetic field detection portion disposed to be allowed to undergo displacement with respect to the magnetic field generation portion in the optical axis direction (column 11, lines 27-29: “the position sensor may be composed of a magnet and a Hall element”); and in regard to claim 22, that the magnetic field detection portion is disposed so as to protrude from the bottom portion of the base (as shown in Figure 6).

It would have been obvious to one of ordinary skill in the art at the time of invention to have used the position detection portion of Nagai with the optical head of Mizuno et al., the motivation being to enable position control to correct a position error from the target position (see page 3, lines 4-8 of the applicant’s admitted prior art).

11. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. & Nagai as applied to claim 27 above, and further in view of Ikegame et al. (US 5,875,166).

For a description of Mizuno et al. & Nagai, see the rejection above. However, Mizuno et al. & Nagai do not explicitly disclose: in regard to claim 29, that the frictional holding body is made of a resin material containing a fluorine-based compound or fluorine-based resin.

Ikegame et al. disclose: in regard to claim 29, a frictional holding body (Figure 2, slide bearings 25 & 26) made of a resin material containing a fluorine-based compound or fluorine-based resin (column 12, lines 10-14).

It would have been obvious to one of ordinary skill in the art at the time of invention to have applied this teaching of Ikegame et al. to the optical head of Mizuno et al. & Nagai, the motivation being to provide a low coefficient of friction and high abrasion resistance between the drive shaft (7) and the frictional holding body (8), thereby enabling a smooth movement (column 12, lines 12-14).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McCarthy (US 7,289,300) discloses an actuator comprising a stationary guide, a carriage movable along the guide, and a piezoelectric motor operatively coupled to the carriage and pushing on the guide such that the motor when energized moves with the carriage along the guide.

Ridler et al. (US 4,065,188) disclose a linear bearing for a parallel tracking arm, wherein the arm uses several pads of polytetrafluorethylene (PTFE) or other materials with similar low friction properties to support a carriage on a pair of polished parallel metal rods and to enable it to slide along the rods.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Agustin whose telephone number is (571) 272-7567. The examiner can normally be reached on Monday-Thursday 8:30 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter Vincent Agustin/
Patent Examiner, Art Unit 2627